

Theoretical Considerations for a Geosynchronous, Earth-Based Gravity Wave

Interferometer

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Abstract

We investigated theoretical considerations in the design of an Earth-based laser interferometer for detecting gravitational waves. Our design envisages a ground-based tracking station in communication with two geosynchronous satellites. We assumed linearized gravitational waves in a Schwarzschild spacetime geometry outside the Earth. Our initial calculations show that such a design is sufficiently sensitive to successfully detect gravitational waves near Earth.